Observing Services

Vision

To set policy, develop procedures, and articulate requirements for the maintenance and enhancement of in situ and remote environmental monitoring.

Concept of Operations

The Cooperative Observer Network and the Radiosonde Network are being modernized. These modernization activities include replacement of the current 91 station upper air network and enhancement of 8,000 cooperative observing stations over the remainder of the decade. As part of a demonstration pilot in New England, about 400 stations are scheduled to be modernized. The modernization of NWS sponsored observing programs will integrate new technologies and science, while building stronger relationships with NOAA's public and private sector partners.

Customer and Partner Requirements

Customer and partner requirements include support for:

- ✓ Real-time access to Automated Surface Observing System (ASOS) data
- ✓ Access to mesonet data including thosefrom surface transportation
- ✓ Real-time access to Cooperative Observer Program (COOP) data
- ✓ Access to high resolution data.

Performance Measures

The performance measures focus on increasing the number and quality of observations customers can obtain from NOAA. Increasing observations is vital to NOAA's ability to maximize the benefits of its products and services and improve the Nation's environment, public safety and economy.

Performance Measures

Program	FY 04 # of Observing Sites
COOP Modernization	200-400 modernized sites
Radiosonde Replacement System	20 sites

Science and Technology Requirements

- ✓ Data assimilation
- ✓ Ocean Atmosphere model resolution and mesoscale physics
- ✓ Coupling of mesoscale ocean and atmospheric Numerical Weather Prediction NWP) models
- ✓ Expand targeted observations
- ✓ High resolution modeling at the land surface

Product and Service Changes

- ✓ Modernize up to 400 COOP sites.
- ✓ Deploy 20 Radiosonde Replacement System (RRS) sites.
- ✓ Distribute new metadata system software.
- ✓ Implement new instruction for conducting data continuity.
- ✓ Implement new COOP handbooks.

Milestones by Quarter

1st Quarter

- Finalize design for metadata system. (Milestone met, 1st quarter)
- Participate in WMO on Upper Air and Capacity Building committees. (Milestone met, 1st quarter)
- Provide input to 10-year plan supporting the Integrated Earth Observing System. (Milestone met, 1st quarter)

2nd Quarter

- Begin planning for data continuity studies for ASOS replace-ment Ice-Free Wind Sensor, Dew Point Sensor, and All Weather Precipitation Accumulation Gauge. (Milestone met, 2nd quarter)
- Ensure requirements solutions are in place at New England modernized COOP Beta sites. (Milestone met, 2nd quarter)
- Coordinate Upper Air BUFR code tables uniformity issues with WMO Open Area Program Group (OPAG) on Upper Air and with WMO Commission on Basic Services (CBS) codes group on FM 32 and 35. (Milestone met, 2nd quarter)
- Provide and validate RWS thermodynamic and wind processing software algorithms, data quality assessment procedures, and data coding issues. Provide support to problem resolution for system integration testing. (Milestone met, 2nd quarter)

3rd Quarter

- Complete installation of New England Cooperative Observer Demonstration Project. (Milestone met, 3rd quarter)
- Implement use of FAA Order 7900.5b, Surface Weather Observing at NWS observing locations.

4th Quarter

- Validate RRS Work Stations (RWS) Software algorithms and provide support to problem resolution. (Milestone met, 4th quarter)
- Expand use of non-government mesonet data.
- Begin gathering measurments for NCDC data continuity studies on ASOS replace-ment Ice-Free Wind Sensor, Dew Point Sensor, and All Weather Precipitation Accumulation Gauge.
- Full deployment of modernized metadata system.
- Publish final Operations Training Guide for commissioning of RRS.

Integrated Requirements

- ✓ Graphic user interface for quality control in OB2
- ✓ Local Data Acquisition and Dissemination (LDAD) capability to ingest mesonet data

Link to Science and Technology Infusion Plan

The future for Observing Services includes:

- ✓ Air quality sensors
- ✓ Boundary layer profilers
- ✓ Advancements in communications
- ✓ More detailed aircraft meteorological reports
- ✓ Increased capacity of satellite reports
- ✓ Improved GPS Radiosonde Measurements
- ✓ Global Position System
- ✓ Improved use of surface transportation sensors

Training

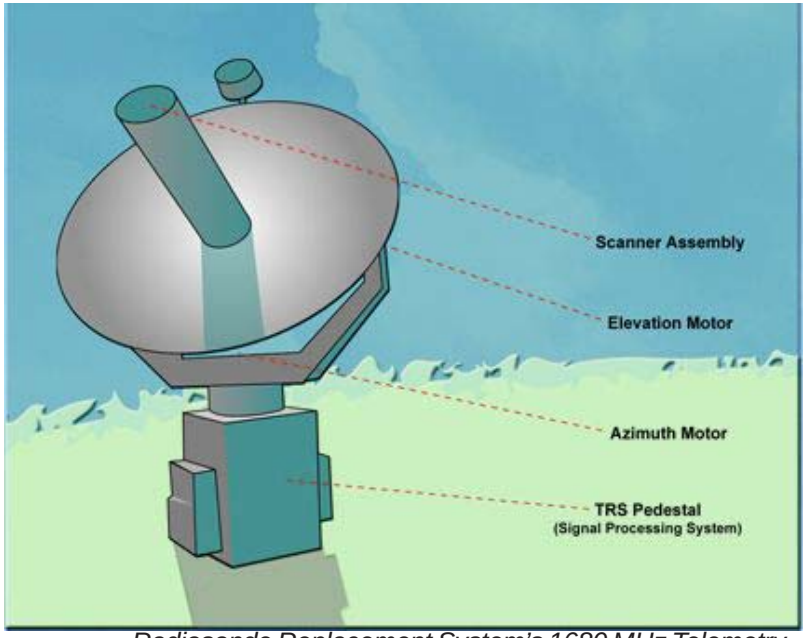
- ✓ Updates to COOP and Data Acquisition (DATAC) classes at NWS Training Center (NWSTC)
- ✓ Training for WFO staff on Fischer & Porter upgrade
- ✓ MDCRS on-line training activities

Outreach

- ✓ International, federal, state, and private sector partners
- ✓ NOAA Climate Monitoring Working Group
- ✓ Climate Reference Network Advisory Panel
- ✓ Western Governor's Drought Advisory Council
- ✓ WMO Committees on Integrated Meteorological Observations and Codes and Commission on Basic Services
- ✓ Annual Meeting of the Association of State climatologists
- ✓ Partners meetings on COOP modernization and site selection teams
- ✓ Oshkosh Air Show
- ✓ NBAA Convention
- ✓ Air Transport Association Meetings
- ✓ Aircraft Owners and Pilots Association meetings and conventions
- ✓ WMO Expert on Upper Air Systems Intercomparisons
- ✓ AMS Conference
- ✓ WMO Technical Conference
- ✓ NOAA Observing Systems Council
- ✓ Environmental Services Data and Information Management (ESDIM)
- ✓ Satellite Telecommunications Interagency Working Group
- ✓ Earth Observation System
- ✓ Weather Information Surface Transportation

Dissemination

- ✓ Work toward developing and implementing Internet access to high resolution data sets.
- ✓ Work with the FSL in providing data collection capabilities.
- ✓ Provide improved interim data assimilation for COOP data.
- ✓ Secure National support for the Central Region Weather Coder II (WxCoder II) and Southern Region Interactive Voice Remote Observation Collection (IV ROC)
  data assimilation
  solutions.



Radiosonde Replacement System's 1680 MHz Telemetry Receiving System (TRS).

Verification

Observing Services will coordinate the process of using COOP data sites for temperature forecast verification.

Regional Initiatives

The Regions are assisting with the deployment of Fischer & Porter raingauge upgrade. The regions are actively supporting Station Medadata Management System (SMS) implementation. The regions are developing two methods for automating the transmission of data from COOP stations.

Central

- ✓ WxCoder II provides for web based entry and dissemination of WS form B-91. Support annual EAA Fly-in at Oshkosh, WI, with the goal of fostering both aviation and observational services outreach.

Southern

- ✓ Interactive Voice Remote Observation Collection (IV ROC) provides a telephonic system to collect and disseminate COOP observations.

Eastern

- ✓ The Eastern Region is leading the effort to establish and operate the COOP New England Demonstration Pilot.

Contact Information

Rainer Dombrowsky, Chief, Observing Services Division, 301-713-0154, ext.110, rainer.dombrowsky@noaa.gov.